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(FILE 'HOME' ENTERED AT 10:06:19 ON 01 MAR 2006)

FILE 'CA' ENTERED AT 10:06:27 ON 01 MAR 2006

L1 1105206 S (DETECT? OR DETERMIN? OR SCREEN? OR ASSAY? OR ANALY? OR TEST? OR  
MEASUR? OR MONITOR? OR INVESTIGAT? OR EVALUAT? OR SENSE# OR  
SENSING OR SENSOR OR IDENTIF? OR PROBE# OR PROBING OR QUANTITAT?  
OR QUANTIF?) (5A) (PROPERTY OR ACTIVITY OR SELECTIVITY OR MATERIAL  
OR CATALY? OR CHARACTERIS?)

L2 283896 S (EXAMIN? OR ASCERTAIN? OR DISTINGUISH? OR COMPAR? OR RANK OR  
CLASSIF? OR ASSESS?) (5A) (PROPERTY OR ACTIVITY OR SELECTIVITY OR  
MATERIAL OR CATALY? OR CHARACTERIS?)

L3 1031201 S (L1-2 NOT PY>2000)OR(L1-2 AND PATENT/DT AND PY<2003)

L4 108492 S L3 AND CATALY?

L5 5748 S L4 AND(OPTIMI? OR OPTIMUM)

L6 1669 S L5 AND (SCREEN? OR GROUP? OR SELECT? OR CHOICE OR CHOOS? OR  
SORT? OR RANK? OR NARROW? OR PICK?)

L7 2161 S L4 AND COMPARATIV?

L8 3783 S L6-7

L9 270 S L8 AND(MASS SPECTRO? OR CHROMATOG? OR RAMAN)

L10 115 S L9 NOT(ENZYM? OR RNA OR DNA OR RNASE OR STEROID? OR HUMIC OR  
BREEDER OR BIOPSY OR LYASE OR LYSINE OR ALANINE OR LIVER OR PAINT  
OR GLYCOL OR CYSTAMINE)

L11 47 S L6 AND L7

L12 26 S L11 NOT(ENZYM? OR RNA OR DNA OR RNASE OR STEROID? OR HUMIC OR  
BREEDER OR BIOPSY OR LYASE OR LYSINE OR ALANINE OR LIVER OR PAINT  
OR GLYCOL OR CYSTAMINE)

L13 410058 S L1/TI,IT,ST OR L2/TI,IT,ST

L14 30916 S L4 AND L13

L15 1175 S L14 AND COMPAR?(4A) (ANALY? OR DETERMIN? OR STUDY? OR STUDIE# OR  
INVESTIGAT? OR EVALUAT? OR EXAMIN?)

L16 931 S L15 NOT(ENZYM? OR RNA OR DNA OR RNASE OR STEROID? OR HUMIC OR  
BREEDER OR BIOPSY OR LYASE OR LYSINE OR ALANINE OR LIVER OR PAINT  
OR GLYCOL OR CYSTAMINE)

L17 367 S L16 AND CATALY?(4A)COMPAR?(4A) (ANALY? OR DETERMIN? OR STUDY? OR  
STUDIE# OR INVESTIGAT? OR EVALUAT? OR EXAMIN?)

L18 47 S L16 AND(SELECTIV?(8A)ACTIV? OR SEMIMICRO OR MICROACTIV?)

L19 516 S L10,L12,L17-18

L20 458 S L19 NOT(DECOMP?(2A) (H2O2 OR PEROXIDE)OR DISPERSION OR STRIPPING  
OR MODULUS OR BIOMASS OR XPS OR STUDY(1W)STRUCTURE OR PYROLYSIS  
OR CARBON 14 OR TIRON)

L21 15 S L19 NOT L20 AND (APPARATUS/TI OR ADSOR?)

L22 433 S L20 NOT(MAIZE OR MAISE OR WATER ELECTROLYSIS OR OV 225 OR D2 OR  
FOAM OR ASH OR LUNG OR POST COLUMN OR ETHYLPROPIO? OR SUBSTITUENT  
OR GRIGN? OR NATURAL GAS)

L23 387 S L22 NOT(DENSITY FUNCTIONAL OR BASE OIL OR PERIODATE OR FLUORIDE  
CONTENT OR AMMOXID? OR ANILINE POINT OR ORGANOHAL? OR LIQUEFACT?  
OR LIVING OR LEVEL OR BENZOATE)

L24 402 S L21,L23

=> d bib,ab 1-402 l24

L24 ANSWER 47 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 131:342549 CA

TI Combinatorial discovery of oxidative dehydrogenation **catalysts** within the Mo-V-Nb-O system  
 AU Cong, Peijun; Dehestani, Ahmad; Doolen, Robert; Giaquinta, Daniel M.; Guan, Shenheng; Markov, Victor; Poojary, Damodara; Self, Kyle; Turner, Howard; Weinberg, W. Henry  
 CS Symyx Technologies, Santa Clara, CA, 95051, USA  
 SO Proceedings of the National Academy of Sciences of the United States of America (1999), 96(20), 11077-11080  
 AB Combinatorial methodologies were used for the synthesis and **screening** of mixed metal oxide heterogeneous **catalysts**. Primary **screening** at low reactant conversions at a throughput of greater than 10,000 **catalyst** compns. per mo was performed by using simultaneous MS and photothermal deflection spectroscopy on spatially sepd. thick film **catalysts** with  $\approx$  200  $\mu$ g per **catalyst** prepd. by using automated liq. dispensing. Secondary **screening** under realistic operating conditions was performed at a throughput of greater than 3,000 **catalyst** compns. per mo on  $\approx$ 50 mg of **catalyst** in an array of fixed bed microreactors with gas **chromatograph** detection. The approach was validated by the discovery of **catalysts** with superior performance to those previously described for the oxidative dehydrogenation of ethane to ethylene. We show the full implementation and integration of combinatorial methodologies for synthesis, **screening**, discovery, and **optimization** of multicomponent heterogeneous **catalysts**.

L24 ANSWER 49 OF 402 CA COPYRIGHT 2006 ACS on STN  
 AN 131:259694 CA  
 TI **Comparative study** of Fischer-Tropsch synthesis with H<sub>2</sub>/CO and H<sub>2</sub>/CO<sub>2</sub> syngas using Fe- and Co-based **catalysts**  
 AU Riedel, T.; Claeys, M.; Schulz, H.; Schaub, G.; Nam, S.-S.; Jun, K.-W.; Choi, M.-J.; Kishan, G.; Lee, K.-W.  
 CS Engler-Bunte Institut, Universitat Karlsruhe, Karlsruhe, 76128, Germany  
 SO Applied Catalysis, A: General (1999), 186(1,2), 201-213  
 AB Hydrogenation of CO, CO<sub>2</sub>, and their mixts. was **comparatively studied** with a Co-MnO-Aerosil-Pt and a Fe-Al<sub>2</sub>O<sub>3</sub>-Cu-K **catalyst**. In addn., several iron **catalysts** were varied and **examd.** for CO<sub>2</sub> hydrogenation: (1) using several supports (SiO<sub>2</sub>, TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>), (2) alkali promotion (Li, Na, K, Rb), and (3) use of zeolite Y as a component. The **catalysts** were characterized by adsorption methods, XRD, TPR, and temp.-programmed decarburation following H<sub>2</sub>/CO<sub>2</sub> treatment. Iron and cobalt **catalysts** behaved differently in CO<sub>2</sub> hydrogenation. With the alkalized iron **catalyst**, the same hydrocarbon product compn. was obtained from a H<sub>2</sub>-CO<sub>2</sub> and from a H<sub>2</sub>-CO (synthesis gas) in spite of the CO partial pressure remaining low, specifically due to water gas shift equil. constraints. With the cobalt **catalyst** at increasing CO<sub>2</sub> and, resp., decreasing CO content in the synthesis gas, the product compn. shifted from a Fischer-Tropsch type (mainly higher hydrocarbons) to almost exclusively methane. This different behaviors was explained by different modes of formation of the kinetic regime of FT synthesis-selective inhibition of methane formation and the selective inhibition of product desorption as a prerequisite for chain growth (e.g., in the case of iron, through irreversible carbiding and alkali surface coverage; and in case of cobalt, through strong reversible CO adsorption). **Investigation** of the

various modified iron **catalysts** showed alumina to be the best support for CO<sub>2</sub> hydrogenation and potassium to act as a powerful promoter. With the Fe-Y-zeolite-alkali **catalysts**, a decrease of methane selectivity was obsd., in the order of Li < Na < K < Rb when applied as promoters.

L24 ANSWER 50 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 131:222718 CA

TI **Mass spectrometers** and methods for rapid **screening** of libraries of different **materials**

IN Weinberg, W. Henry; McFarland, Eric W.; Cong, Peijun; Guan, Shenheng  
PA Symyx Technologies, USA

SO U.S., 26 pp., Cont.-in-part of U.S. Ser. No. 898,715.

PI US 5959297 A 19990928 US 1997-946730 19971008

US 6030917 A 20000229 US 1997-898715 19970722

PRAI US 1996-28106P P 19961009

AB Methods and app. for **screening** diverse arrays of **materials** are provided. Techniques are provided for rapidly characterizing compds. in combinatorial arrays of materials for discovering and/or **optimizing** new materials with specific desired properties. A scanning **mass spectrometer** is used which includes an ionization chamber and a collector that outputs an elec. signal responsive to the quantity of gas ions contacting the collector surface. A conduit system **selectively** withdraws samples from the array of materials, passing the samples into the ionization chamber. In a specific embodiment, reactants are passed through the conduit system to the **selected** regions of interest on the substrate.

L24 ANSWER 89 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 129:114131 CA

TI High-throughput **screening** of solid-state **catalyst** libraries

AU Senkan, Selim M.

CS Department of Chemical Engineering, Univ. of California, Los Angeles, CA, 90095-1592, USA

SO Nature (London) (1998), 394(6691), 350-353

AB Combinatorial synthesis methods allow the rapid prepn. and processing of large libraries of solid-state materials. The use of these methods, together with the appropriate **screening** techniques, has recently led to the discovery of materials with promising superconducting, magnetoresistive, luminescent and dielec. properties. Solid-state **catalysts**, which play an increasingly important role in the chem. and oil industries, represent another class of material amenable to combinatorial synthesis. Yet typically, **catalyst** discovery still involves inefficient trial-and-error process, because **catalytic activity** is inherently difficult to **screen**. In contrast to supercond., magnetoresistivity and dielec. **properties**, which can be **tested** by contact probes, or luminescence, which can be obsd. directly, the **assessment** of **catalytic activity** requires the unambiguous **detection** of a specific product mol. above a small **catalyst** site on a large library. **Screening** by in situ IR thermog. and microprobe sampling **mass spectrometry** have been suggested, but the first method, while **probing activity**, provides no information on reaction products, whereas the second is difficult to implement because it requires the transport of

minute gas samples from each library site to the detection system. Here I describe the use of laser-induced resonance-enhanced multiphoton ionization (REMPI) for sensitive, **selective** and high-throughput **screening** of a library of solid-state **catalysts** that activate the dehydrogenation of cyclohexane to benzene. I show that benzene, the product mol., can be **selectively** photoionized in the vicinity of the **catalytic** sites, and that the **detection** of the resultant photoions by an array of microelectrodes provides information on the activity of individual sites. Adaptation of this technique for the **screening** of other **catalytic** reactions and larger libraries with smaller site sizes seems feasible, thus opening up the possibility of exploiting combinatorial approaches as an efficient method for the discovery and **optimization** of solid-state **catalysts**.

L24 ANSWER 98 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 129:7871 CA

TI **Comparative Study of Catalytic Reduction of Nitric Oxide with Carbon Monoxide over the  $\text{La}_{1-x}\text{Sr}_x\text{BO}_3$  (B = Mn, Fe, Co, Ni) Catalysts**

AU Shen, Shiau-Tzong; Weng, Hung-Shan

CS Department of Chemical Engineering, National Cheng Kung University, Tainan, 70101, Taiwan

SO Industrial & Engineering Chemistry Research (1998), 37(7), 2654-2661

AB A **catalyst** with the highest activity to reduce NO with CO was selected as a reducing reactant from four series of perovskites  $\text{La}_{1-x}\text{Sr}_x\text{BO}_3$ , where B = Mn, Fe, Co, or Ni. The cause for different **activity** was also closely **examd.** by characterizing the perovskites by x-ray diffraction (XRD), XPS, NO-temp.-programmed desorption (TPD), and CO-temp.programmed redn (TPR). **Activity test** results indicated the  $\text{LaFeO}_3$  **catalyst** had the highest activity. Substituting La with Sr increased the activity in the Mn, Co, and Ni series. In addn., an optimal substitution fraction existed for each series, whereas adding Sr did not promote  $\text{LaFeO}_3$  **catalyst** activity. The at. ratio of B/(La + Sr) obtained from the XPS anal. can be correlated to the substitution fraction of Sr(x) and, subsequently, with **catalytic** activity. By increasing x, this ratio initially increased but later decreased when the  $\text{SrBO}_3$  phase appeared. Among the **catalysts** in the same series, the one with a higher B/(La + Sr) ratio on the surface yielded a higher activity. NO-TPD exptl. results indicated that NO **adsorption** plays an influential role in this **catalytic** redn. reaction. Moreover, the temp. range of NO desorption was the same as that of the reaction; the amt. of NO desorbed was roughly proportional to **catalyst** activity. CO-TPR revealed the reducibility of the **catalyst** is another factor affecting activity. A **catalyst** having a larger Sr fraction was more easily reduced; however, such redn. became difficult when the  $\text{SrBO}_3$  phase appeared.

L24 ANSWER 124 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 126:109425 CA

TI The first combinatorially prepared and **evaluated** inorganic **catalysts**. Polyoxometalates for the aerobic oxidation of the mustard analog tetrahydrothiophene (THT)

AU Hill, Craig L.; Damico Gall, Robin

CS Department of Chemistry, Emory University, Atlanta, GA, 30322, USA

SO Journal of Molecular Catalysis A: Chemical (1996), 114(1-3), 103-111  
AB The combinatorial synthesis and **evaluation** of inorg. **catalysts** is described. The **catalysts** are an array of early-transition-metal-oxygen-anion clusters (polyoxometalates) and the reaction is the aerobic oxidn. of a mustard thioether analog, tetrahydrothiophene (THT). **Selective** oxidn. of THT to the desired sulfoxide, THTO, was achieved in high **selectivity** (>99%) and under relatively mild conditions (95°C, 1.52 atm). Solns. with a molar ratio of 1:2 (phosphorus:vanadium) had the highest **catalytic** activity. 51V NMR and IR were used not only to identify the self assembling polyoxometalates in several representative precursor combinations but also to assess the stability of one representative polyoxometalate **catalyst**, 1P:2V:10W, under **catalytic** conditions (no decompn. after 50 turnovers). Gas **chromatog.** was sufficient to rapidly **quantify** the product (THTO) yields and **selectivities** of representative reactions. Combinatorial methodol. should be applicable to and provide the same advantages for discovery and **optimization** of **catalysts** as it has for pharmaceuticals.

L24 ANSWER 128 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 126:30925 CA

TI Cationic bis(oxazoline) and pyridylbis(oxazoline) Cu(II) and Zn(II) Lewis acid **catalysts**. A **comparative study** in **catalysis** of Diels-Alder and aldol reactions

AU Evans, David A.; Kozlowski, Marisa C.; Tedrow, Jason S.

CS Dep. Chem. Chem Biol., Harvard Univ., Cambridge, MA, 02138, USA

SO Tetrahedron Letters (1996), 37(42), 7481-7484

AB A systematic comparison of the cationic Lewis acidic Cu(II) and Zn(II) **catalysts** derived from bis(oxazoline) (box) and pyridylbis(oxazoline) (pybox) ligands is presented. Upon **screening** the **catalysts** in the Diels-Alder and aldol reactions, the Cu-based **catalysts** were found to be superior.

L24 ANSWER 130 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 125:280448 CA

TI Evaluation of hydrous titanium oxide-supported NiMo **catalysts** for pyrene hydrogenation and upgrading coal-derived liquids

AU Lott, Stephen E.; Gardner, Timothy J.; McLaughlin, Linda I.; Oelfke, John B.

CS Process Res. Dep., Sandia National Lab., Albuquerque, NM, 87185-0709, USA

SO Fuel (1996), 75(12), 1457-1466

AB This study focuses on the synthesis of NiMo-based **catalysts** in both bulk and coated forms, using ion-exchangeable silica-doped hydrous titanium oxide (HTO:Si) supports. These **catalysts** were **evaluated** and **compared** against com. NiMo-based **catalysts** (Amocat 1C and Shell 324) with respect to the hydrogenation of pyrene and the hydrodesulfurization/hydrodenitrogenation of coal-derived liqs. For pyrene hydrogenation, both bulk and supported (Coated) NiMo/HTO:Si **catalysts** performed better than com. benchmark **catalysts** on either a **catalyst** wt. or an active metals basis. For both hydrodesulfurization and hydrodenitrogenation of coal-derived liqs. in a trickle-bed reactor, the supported and bulk forms of the NiMo/HTO:Si **catalysts** nearly equaled

the overall performance of the com. **catalysts** at 3.45, 6.89 and 10.3 MPa and were superior on a total active metals basis. Extensive **catalyst** characterization was performed to explain the enhanced activity of the NiMo/HTO:Si materials.

- L24 ANSWER 185 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 118:194801 CA  
TI A **comparative study** of oxidative methane coupling **catalysts**. I. Physical properties and overall performance  
AU Sin, Won Dong; Lee, Jae Sung  
CS Res. Inst. Ind. Sci. Technol., Pohang Inst. Sci. Technol., Pohang, S. Korea  
SO Oxidation Communications (1992), 15(3-4), 115-26  
AB In order to understand the intrinsic properties of oxidative CH<sub>4</sub> coupling **catalysts**, MgO-supported Li, Na, Pb, Mn, and Sm compds. have been compared under the same conditions. These **catalysts** represent most widely studied groups of CH<sub>4</sub> coupling **catalysts**. **Catalysts** based on Li, Na and Pb were deactivated rapidly due to the loss of active components by evapn. The Li, Pb and Sm **catalysts** showed similar selectivity-conversion curves giving ca. 20% yields of ethane and ethylene. Mn was the least selective, giving mostly CO and CO<sub>2</sub>. Sm showed the highest specific activity of CH<sub>4</sub> conversion. Among the single component model **catalysts** Sm is the most promising one for further development taking **activity**, **selectivity** and stability into consideration.
- L24 ANSWER 203 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 115:235170 CA  
TI Strategies for using a computer-operated reaction system for the **evaluation** of **catalyst activity** by **optimization** of product yield  
AU Nakamura, R.; Shimoji, M.; Niiyama, H.  
CS Dep. Chem. Eng., Tokyo Inst. Technol., Tokyo, 152, Japan  
SO Catalysis Today (1991), 10(2), 119-29  
AB A fully automatic, computer-operated reaction system (FACORS) comprising a gas-flow reaction app., several gas **chromatographs**, a desk-top computer, etc., was applied to unattended feedback **optimization** expts. for **catalyst activity tests**. In the expts. the computer executed a **catalytic** reaction, changed  $\geq 1$  exptl. variables based on an **optimization** strategy and the data obtained until an **optimum** reaction condition that maximizes the yield (Y) of an object product, and the max. yield (Y<sub>max</sub>) were obtained. The expts. also gave **catalytic** information around the **optimum** condition. The reactions studied included the dehydration of EtOH to ether over alumina and the partial oxidn. of propene to acrolein over a Bi<sub>2</sub>O<sub>3</sub>.MoO<sub>3</sub>-based **catalyst**. The strategies proposed were a 1-variable-swing method (S1) and a ridge-point method (S2). They were tested and compared with traditional methods, including a modified Nelder-Mead simplex method, etc., in simulations before use in the expts. Method S1 was one of the most powerful and useful strategies for 1-variable **optimizations** and method S2 for 2- to 4-dimensional ones, while the simplex method was preferable in 5 or 6 dimensions. **Catalyst activity tests** using such feedback **optimization** expts. were superior to those using conventional methods conducted at given reaction conditions since they gave information which was more effective and reasonable not

only in the **selection** or development of **catalysts**, but also in the design of a process using the **selected catalysts**.

L24 ANSWER 221 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 109:213321 CA  
TI **Comparative study of catalysts** for the oxidative coupling of methane  
AU Burch, R.; Squire, G. D.; Tsang, S. C.  
CS Chem. Dep., Univ. Reading, Reading, RG6 2AD, UK  
SO Applied Catalysis (1988), 43(1), 105-16  
AB Mg, Sm, Mn, and La oxide and alkali-promoted oxide **catalysts** were prepd. and **tested** for the oxidative coupling of CH<sub>4</sub>. For the alkali-promoted oxides at steady state, the **selectivity** for the formation of C<sub>2</sub> products increases in the order La < Sm < Mg < Mn. There is a similar order for the **selectivity** to C<sub>2</sub>H<sub>4</sub>. As the temp. is increased the **selectivity** to C<sub>2</sub>H<sub>4</sub> increases at the expense of C<sub>2</sub>H<sub>6</sub>. However, the relative amts. of these 2 products vary significantly from one **catalyst** to another, and in some cases C<sub>2</sub>H<sub>4</sub> becomes the major product. The initial **selectivities** of the **catalysts** to C<sub>2</sub>H<sub>4</sub> are high, the highest being 63% over an alkali-promoted Mn oxide **catalyst**. The role of the alkali metal in promoting the La, Sm, and Mn oxides is to poison total oxidn. sites. These oxides may differ from MgO where, from the existing literature, the role of the alkali increases the rate of formation of Me radicals. The **optimum catalyst** for the formation of unsatd. hydrocarbons is discussed.

L24 ANSWER 340 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 74:80188 CA  
TI Laboratory apparatus for the **comparative evaluation of catalysts**  
AU Musa, Z.; Shimanskaya, M. V.; Zile, J.; Liepina, R.  
CS Inst. Org. Sint., Riga, USSR  
SO Latvijas PSR Zinatnu Akademijas Vestis, Kimijas Serija (1970), (6), 743-5  
LA Russian  
AB The app. was constructed for providing a single operating condition of exptl. **catalysts** both in activation and contact processes of oxidizing furfurals. The fluctuation of contact time is insignificant and the efficiency of the reactions indicates possibilities for **comparing** various **catalysts**.

L24 ANSWER 359 OF 402 CA COPYRIGHT 2006 ACS on STN  
AN 70:59447 CA  
TI **Comparative semimicro method for investigating the activity of catalysts**  
AU Kiezel, Lech; Rutkowski, Marian; Tomasik, Zdzislaw  
CS Politech. Wroclaw, Wroclaw, Pol.  
SO Chemia Stosowana, Seria A: Kwartalnik Poswiecony Zagadnieniom Technologii Chemicznej (1968), 12(3), 407-15  
LA Polish  
AB A method and an app. designed for simultaneous **testing** of 4 **catalysts** are described. The app. is a glass 4-chamber reactor to which the raw materials are introduced by means of syringes. The raw materials may be petroleum fractions or individual hydrocarbons. The **measure of catalyst activity** is the degree of conversion of hydrocarbon materials, as calcd. from the amt. of new hydrocarbons found in the liq. products, gas products, and coke. The amt. of hydrocarbon products is detd. by gas

**chromatog.** The method may be employed for **testing** the **activity** of **catalysts** used in **catalytic** cracking processes, of carriers for hydrocracking processes, of isomerization **catalysts**, of **catalysts** used in alkylation processes, etc. The usefulness of the method was checked by **comparing** 17 **catalysts** in the decompn. of p-cymene at 530°.

L24 ANSWER 388 OF 402 CA COPYRIGHT 2006 ACS on STN

AN 51:102984 CA

OREF 51:18562g-h

TI Differential thermal analysis; new technique for **testing** silica-alumina **catalysts**

AU Stone, Robert L.; Rase, Howard F.

CS Univ. of Texas, Austin

SO Anal. Chem. (1957), 29, 1273-7

AB The activity of fluid cracking **catalysts** can be **detd.** by **comparing** the difference in temp. rise for the adsorption of an active gas such as NH<sub>3</sub>, H<sub>2</sub>O, or an org. N compd. (e.g. piperidine) on the **catalyst** and adsorption of the same gas on an inert material. The equipment may also be used for the **detn.** of the C content of **catalysts**, for studies of **catalyst** poisoning, **detn.** of heats of chemisorption, and studies of phys. and chem. properties of **catalysts**.

=> log y

STN INTERNATIONAL LOGOFF AT 12:57:13 ON 01 MAR 2006